

reticulated, giving it a rough appearance under the lens. The spiracles are dull red. Minute setae present on the hind abdominal segments in the vicinity of the spiracles.

EXPLANATION OF PLATE XII.

- Fig. I. Egg.
Fig. II. Showing pattern of network surrounding the egg.
Fig. III. Young larva just emerged.
Fig. IV. Mature larva.
Fig. V. Last three segments showing position of gland and eversible organs.
Fig. VI. Eversible organ distended.
Fig. VII. Dorsal view of pupa.
Fig. VIII. Lateral view of pupa.
Fig. IX. Ventral view of pupa.

Critical Notes on Some Species of Mymaridae (Hymen.).

BY A. A. GIRAULT, Brisbane, Queensland, Australia.

FAMILY MYMARIDAE.

SUBFAMILY GONATOCERINAE.

TRIBE GONATOCERINI.

Genus *Litus* Haliday.

1. *Litus cynipseus* Haliday.

It will be of interest to compare this European species with another species, described from Ceylon, namely, *Litus enocki* Howard. I have the type of the latter and of the former, a female specimen sent to the U. S. by Mr. Frederick Enock, of London, and determined by an English authority (see beyond). The slide containing it was labelled "Fredc. Enock, Preparer. Order Hymenoptera. Family Mymaridæ. Genus *Litus*. Species *cynipseus* ♀. The Fairy Fly. Spot lens, 2-inch to 1-inch."

The two species differ as follows: The European species is thrice the size of the species from Ceylon but nearly of the same color, a very intense, dark brown; however, all of the antennæ and the femora are concolorous, not lighter as in *enocki*. The antennæ differ in that the proximal funicle joint in *cynipseus* is distinctly much shorter than funicle joint 2, not much longer than wide; the two joints are slender and sub-equal in *enocki*;

also in the European species the fourth funicle joint is shorter and thicker than in *enocki* and the antennal club much stouter, comparatively enormous. The fore wings differ very much in shape, having a pronounced curve in *enocki* but nearly straight in *cynipseus* and more slender. The caudal wings are more similar but they are dusky and spotted with white in *cynipseus* and appear to lack the line of discal cilia along one margin, bearing only the midlongitudinal line of discal cilia. Also in *cynipseus* the tarsal joints are longer. Another difference is that the scape of the European species along each margin is serrated, each serration giving origin to a seta; this is especially true of the outer margin but probably the whole surface of the scape is roughened, seen thus only in outline at the margins. In *cynipseus*, the strigil is strong. The two species agree, or nearly, in other points but enough has been said to show that they are very distinct from each other.

SUBFAMILY MYMARINAE.

TRIBE ANAPHINI.

Genus *Anaphes* Haliday.

1. *Anaphes punctum* (Shaw) Haliday.

I have as a loan a single female specimen of a mymarid which has been identified by an English entomologist (E. A. Fitch—See Enock, Trans. Ent. Soc., of London, 1909, p. 450), as the above species and transmitted to Dr. L. O. Howard, by Mr. Fred. Enock, of London. It will be of value to point out how this species differs from the American species so far known and described. It is most closely related to *hercules* Girault but is brown instead of black and differs structurally from that species in having both wings somewhat broader and the proximal tarsal joints of the intermediate legs distinctly longer. Otherwise, they are very much alike. However, both appear to be good species. The British species does not resemble closely any of the other American forms of the genus with the possible exception of *pratensis* Foerster which, as I have published elsewhere, is a member of our fauna, providing my identification be correct. The species *punctum* differs from *pratensis* in being different in color, brown instead of black and structurally in possessing differently shaped antennæ; thus, in

pratensis the antennal club is short and stout, only twice longer than broad, thrice longer than broad in the other species and in *pratensis* also, the second funicle joint is distinctly a third longer and much narrower than funicle joint 6, only a fourth longer and but slightly narrower in *punctum*. (The specimen of *pratensis* was captured in Illinois and compared with specimens in the United States National Museum labelled, "Anaphes *pratensis* Först., France." I have written of them elsewhere).

TRIBE MYMARINI.

Genus *Polynema* Haliday.

1. *Polynema euchariforme* Haliday.

A female of this species, loaned to me by Dr. L. O. Howard and also identified by the English gentleman mentioned above and received in the U. S. through the kindness of Mr. Fred. Enock, should also receive some attention in this connection. As represented here, the species is different from any American form so far known to me, but is much like both *consobrinus* Girault and *striaticorne* Girault in the shape and ciliation of the fore wing. However, it differs from the former in that the fore wings are noticeably less clavate and consequently somewhat narrower; the antennæ differ but not very much, in *euchariforme* the funicle joints all slightly shorter; other differences are the shorter posterior femora and abdominal petiole and the uniformly pallid yellowish legs in the British species. The difference from *striaticorne* is more pronounced—the much less robust body, shorter leg and antennal segments—specifically, in *euchariforme* the third funicle joint is only about half the length of the second, in *striaticorne* three-fourths the length of the second and nearly twice longer of itself than that of the British species—narrower wings and differently colored legs. The fore wings in *euchariforme* bear about ten longitudinal lines of discal cilia at their widest blade portion and their longest marginal cilia are nearly as long as the greatest width of those wings. The club and funicle of antennæ and the distal tarsal joints are concolorous with the brownish black of the body.

At this same time it is desirable to compare this British species with several other European forms which I happen to

have with me. These two are *Polynema flavipes* Walker and *P. fumipenne* Walker; the specimens of the former are from the collections of the United States National Museum and of the latter (two specimens) from Mr. C. O. Waterhouse, sometime of the British Museum. The specimens of *fumipenne* (identified by Mr. Waterhouse, perhaps in association with Mr. Enock) I have described elsewhere; it differs very pronouncedly from *euchariforme*: the fore wings are very much broader, their discal ciliation very much coarser, the body and appendages much longer and slenderer, the legs more intensely colored (orange) and thus the two species should never be confused. The species *flavipes* differs nearly as much, but the discal ciliation of the fore wings in this species is moderately fine, not coarse; the coloration is somewhat as in *fumipenne*. L

Thus, here are three distinct British species of the genus which differ from any American form known to me and I describe a fourth below.

The following specimens: *Polynema euchariforme* Haliday—a single female on a slide loaned by Dr. L. O. Howard and labelled "Fredc. Enock, preparer. Order Hymenoptera. Family Mymaridæ. Genus *Cosmocoma*. Species *euchariformis* ♀. The Large Fairy Fly. Spot lens, 2-inch to 1/2-inch."

Polynema flavipes Walker—A pair found mounted on tags in the United States National Museum collection, now remounted in xylol-balsam and labelled "Polynema flavipes, Walker, ♀ ♂ Am. Ent. Soc. To be returned."

Polynema fumipenne Walker—Two females kindly sent to me by Mr. C. O. Waterhouse, now mounted in xylol-balsam and labelled, "*Cosmocoma fumipennis* Walker. Eng. Richmond, 24.9.09. C. Waterhouse, Whitehouse Plantations."

2. *Polynema brittanum* new species.

Normal position.

Male.—Length, 0.80 mm. Moderate to moderately small for the genus. About the same size as *euchariforme* with which it was confused.

General color brownish black or black suffused with some brown, including venation, antennæ, intermediate and posterior femora and tibiæ and distal tarsal joints. Pedicel of antenna suffused with yellowish. Trochanters, knees, tips of tibiæ, proximal three tarsal joints and cephalic legs yellowish, the tarsal joints paler. Wings hyaline.

Falls in with the group of allied species containing *consobrinus* Girault, *aspidiote* Girault, *howardii* Ashmead, *striaticorne* Girault and *euchariforme* Haliday, and most closely allied with *consobrinus* and *striaticorne*; it resembles both casually. However, it differs from *consobrinus* in having the discal ciliation of the fore wing finer and more uniform, the wing somewhat wider (about 16 longitudinal lines of discal cilia across the widest part), its marginal cilia distinctly shorter (the longest about two-thirds the greatest wing width), especially noticeable along the cephalic margin of the blade; the marginal cilia of the posterior wings are likewise shorter, about a half shorter; the proximal tarsal joints are much longer and slender, those of the cephalic tarsi for example, being at least a third longer. The two species otherwise alike as far as could be seen.

From *striaticorne* Girault, the species differs about as much as it does from *consobrinus*, in having the marginal cilia of the fore and posterior wings shorter but the fore wing is somewhat narrower than in *striaticorne*; the legs are formed very much as in the latter but the intermediate and caudal femora are distinctly shorter; the joints of the flagellum are uniformly shorter than those of *striaticorne*, about a fourth or more shorter. Thus, *brittanum* is more nearly like the last named species, especially in tarsal segments, color and discal ciliation of the fore wings.

From the species *howardii* Ashmead it may be distinguished much as *striaticorne* may be, namely by lacking the peculiar arrangement of the marginal cilia of the fore wing; also *brittanum* has finer discal ciliation in the fore wing which is also narrower and bears (as does also the caudal wing) much shorter marginal cilia. The caudal wing in *brittanum* is fuscated distad as it is slightly with *howardii*.

From the species *aspidiote* Girault, *brittanum* differs again in lacking the peculiar arrangement of the marginal cilia of the fore wings and in bearing distinctly shorter marginal cilia on that wing; again, in having the wing differently shaped; around the apex of the fore wing in *aspidiote* the marginal cilia shorten just at the apex; in *brittanum* no shortening occurs but a gradual lengthening from the cephalic wing margin; *brittanum* differs from *aspidiote* in the color of the legs, all tarsi

being pallid yellowish to the distal joint as in the cephalic and intermediate legs of *aspidioti*, but all of the caudal tarsus in the latter species is brown black. The antennal joints are slightly longer in *brittanum*.

From *euchariforme* Haliday, with which this species was confused as shown below, *brittanum* differs in bearing distinctly broader fore wings which bear distinctly shorter marginal cilia along the cephalic wing margin and in having darker legs. Its wings (speaking of *brittanum*) are moderately broad.

(From one specimen, two-thirds-inch objective, one-inch optic, Bausch and Lomb).

Female.—Unknown.

Described from a single male specimen loaned to me for study by Dr. L. O. Howard, and being another one of the series of English species sent to the U. S. by Mr. Fred. Enock, of London. The slide bearing it was labelled, "Fredc. Enock, preparer. Order Hymenoptera. Family Mymaridæ. Genus *Cosmocoma*. Species *euchariformis* ♂. The Large Fairy Fly. Spot lens, 2-inch to 1/2-inch." Thus, the species was taken for the male of *euchariforme* Haliday.

Habitat.—England (?London or vicinity).

Type.—Catalogue No. 14,207, United States National Museum, Washington, D. C., one male in balsam.

I have pointed out in this brief paper the characteristics of some of the European forms of the family Mymaridæ, evidently some of the more common and abundant of the species occurring in England. They have all proved to be distinct from our more common American species. *Anaphes pratensis* Foerster, however, occurs in this country as noted above and elsewhere; I have no knowledge concerning whether or not it may have been introduced or whether it may not have originated here. As concerns the identification of these species I am not altogether satisfied, since the European Mymaridæ are now in a state of much confusion due to their long neglect and also because in most cases the authority for identifications is not definitely stated.